PHENIX

2008 Integration Planning

PHENIX Bi-WEEKLY INTEGERATION PLANNING

3/7/2008

Don Lynch

Shutdown '08 Schedule

2008 Integration Planning

CM Crane Review	Feb-Mar 15
New Beam Pipe Design	Feb
Complete Run 8,	Mar 12
MuTrigger Prototype Tests	Feb 27-March 15
Purge Flammable Gas, Magnet & DAQ Tests	Mar 12-14
Remove lock-out & open shield wall	Mar 14
RPC Prototype C tests (in tent)	Feb- Mar
Disassemble & store shield wall & base	Mar 17-21
Beam pipe design review	mid Mar
Mu Trigger Review	Mar 19
RPC Prototype engineeing & safety review	Mar 28
IR Crane certification	Mar 14
Remove Collars	Mar 17-18
Disconnect EC & move to AH	Mar 17-April 4
Move CM south	Mar 26
Inventory/test assembly of MMN scaffold	Apr
Install CM access stairs	Apr 7-11
RPC Prototype D tests (in tent)	Apr-May

Shutdown '08 Schedule, cont'd

2008 Integration Planning

Design RPC installation fixtures & FEE platforms	Apr-May
MuTrgr Platform review	mid Apr
Move MMS South (MuTr Decaps?)	Apr 15 (tax day)
DC/PC west work ?	Apr 1-30
Install CM Crane	May
Remove North access & MMN 4 lampshades	May
Install Station 1 North scaffolding	May 1
Station 1 North decaps	May
Prep work for Mutrgr platforms (water/elec)	May-June
Prep work for RPC proptotype install	May-June
End of run Party	May 30
Erect MMN scaffolding	June
MMN decaps	June-July
RPC engineering & safety review	mid June
MuTrigger FEE N Install	July
HBD Install	July-August

Shutdown '08 Schedule, cont'd

2008 Integration Planning

RPC prototype gas system	July
Move shielding for RPC prototype installation	July
RPC prototype cable routing & support	July
Modify crystal palace & vapor barrier	July
Install MuTrigger FEE N platform	July
RPC prototype install	August
Install RPC prototype rack in tunnel south	August
Install Mutrigger FEE's in MMS for RPC test	August
Install MuTrigger FEE South platform	August
Install MuTrgr N&S rack cooling & electric	August
Install MuTrigger N cooling water & air	August
Replace tunnel shielding	Sept
Connect electronics/gas/water/air for RPC	Sept.
Install MuTrigger N& S racks	Sept.
Remove all installation equipment	Oct.
Prep for run 9	Oct
Close shield wall start shifts	Nov
Start physics	Dec.

Items Needed for Design Review

2008 Integration Planning

March 2008: RPC prototypes and MuTrigger FEE upgrades

RPC Group:

Detailed Layouts for RPC2 & RPC3 Mechanical assembly including detailed weights, materials, dimensions of components and subassemblies.

Detailed layout for the Cu absorber

Prototype Gas system requirements including gas mixture, flow rates, pressures, pressure drops, piping requirements (quantity/lengths, materials, OD, wall thickness. Prototype gas delivery/distribution/control/safety schematic including requirements for relief valves, gauges, valves, etc. Be prepared to address all gas safety issues.

Prototype rack requirements including power, cooling water, etc. and rack component layout.

Detailed installation scheme for prototypes including list of fixtures and special tools required for installation, transportation requirements (i.e. evaluation of level of care to take in moving transporting and orienting the prototypes from the factory through installation. Also include a list of infrastructure modifications required to install the prototypes.

Detailed scheme for installing the Cu absorber for prototype including list of fixtures and special tools required for installation.

Detailed description of all electronics requirements internal to the prototype detectors, in the prototype rack, and in the rack room. Include all safety issues for all items (fusing, grounding, Recognized lab ratings, e.g. UL, etc.)

Other integration requirements, e.g. DAQ requirements

Outlines for gas system and electrical system operating procedures.

Items Needed for Design Review

2008 Integration Planning

March 2008: RPC prototypes and MuTrigger FEE upgrades
Mu Trigger FEE Group:

Detailed Layouts for FEE enclosure assembly including detailed weights, materials, dimensions of components and subassemblies.

Cooling water and air requirements for FEE's including flow rates, pressures, pressure drops and temperature control requirements. Provide schematics for water and air distribution including valves, gauges, etc.

Rack requirements including power, cooling water, etc. and rack component layout.

Detailed installation scheme for FEE's including list of fixtures and special tools required for installation. Also include a list of infrastructure modifications required to install the prototypes.

Detailed description of all electronics requirements internal to the FEE's, in the racks, and in the rack room. Include all safety issues for all items (fusing, grounding, Recognized lab ratings, e.g. UL, etc.)

Other integration requirements, e.g. DAQ requirements

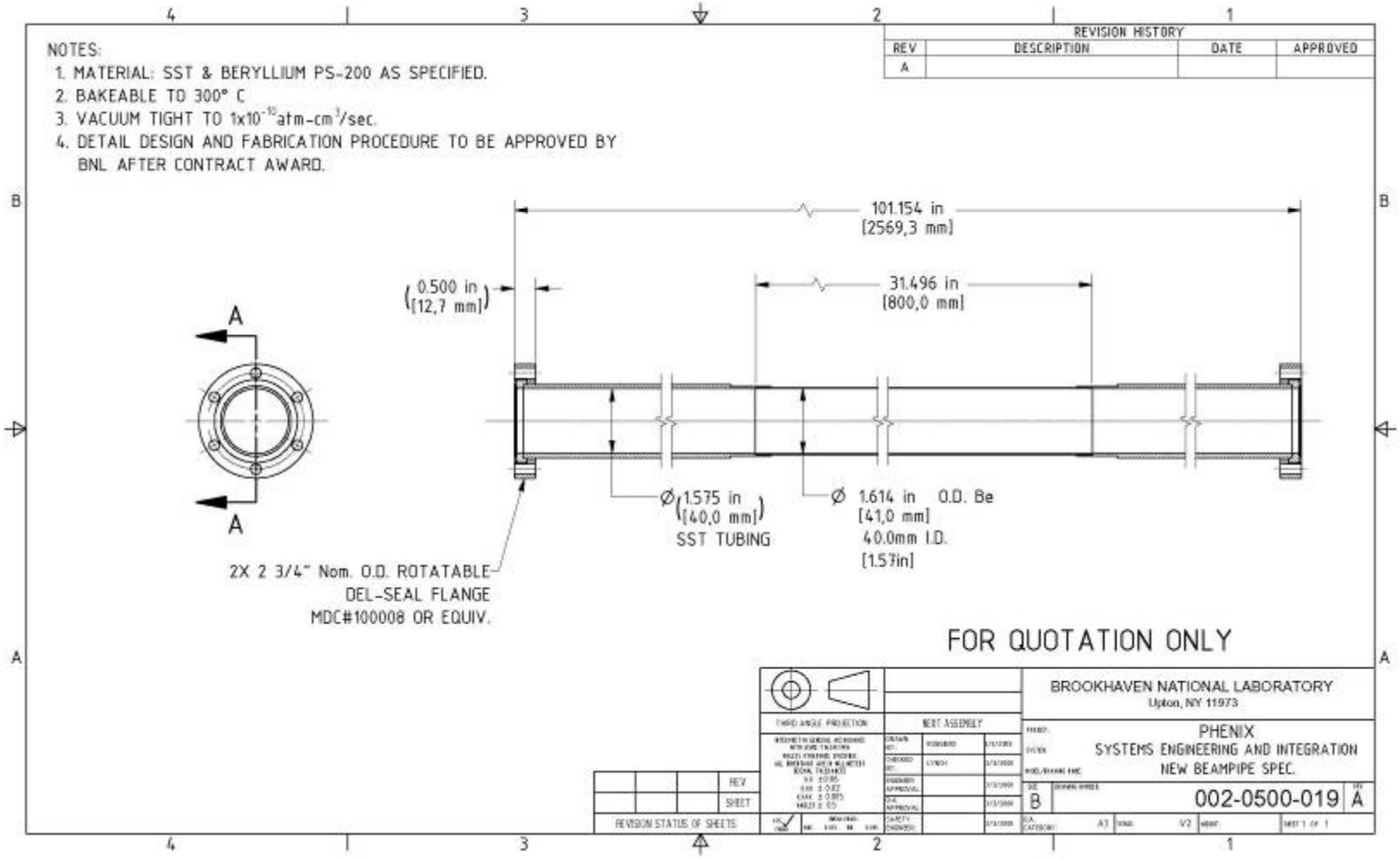
Design Reviews

2008 Integration Planning

- CM Crane (analyses complete need meeting with) (Set up review tomorrow)
- MMN Scaffolding (design submitted to C-A for review)
- New Beampipe Review (ready for review, drawings sent to vendor for quote)
- Station 1 Scaffolding (DESIGN IN PROCESS)
- Mu Trigger FEE N & S 3/14 (Need to secure date)
- RPC Prototype 3/28 (Prototype design, installation, gas system, electronics, safety) (Need to secure date)
- MuTrigger N & S rack platform 4/21-5/2 (On deck for design)
- RPC Stations 1, 2 and 3 ~ 6/22-6/20
- VTX/FVTX review ~ 6/1-8/31
- NCC Review ~ 6/1-8/31
- MMS scaffolding (< 2009)

New Beampipe Design & Review

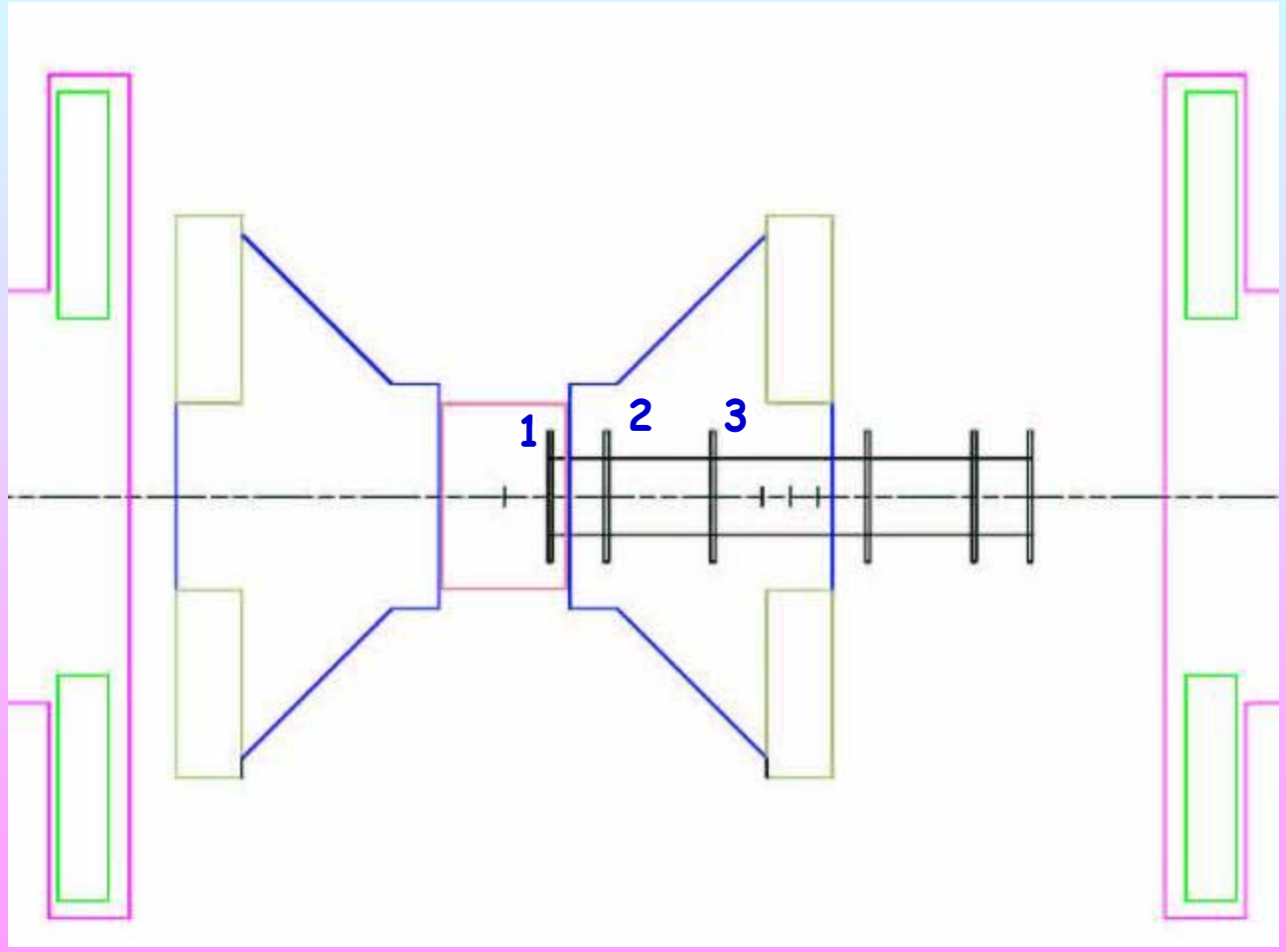
2008 Integration Planning



PHENIX

New Beampipe Design & Review

2008 Integration Planning



Anamorphic view

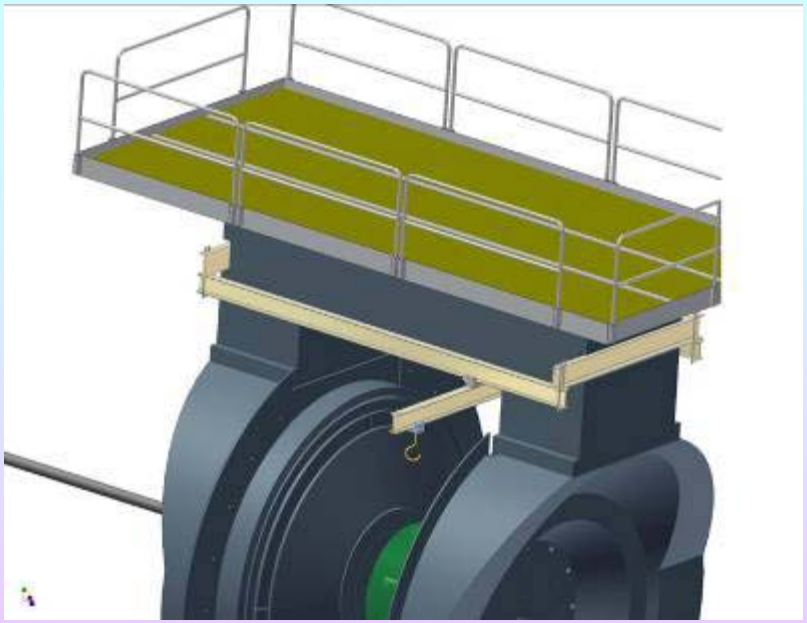
CM moved south position

1. Flange does not shadow BBC or MPC Accessible in this position

2. Flange does not shadow MPC partial shadow of BBC. Only accessible in mid position

3. Flange in NCC

CM Crane



- Uses Gorbel 1-ton capacity Ceiling mounted Bridge Crane, modified to be supported by 2 Steel Channels attached to CM
- Bridge and hoist to be removed for running.
- Crane Design under review


PHENIX Relativistic Heavy Ion Collider (RHIC) PHENIX Experiment

BROOKHAVEN NATIONAL LABORATORY

ENGINEERING CALCULATION

TITLE: Central Magnet Bridge Crane

PREPARED BY: Don Lynch, P.E.

CHECKED BY:

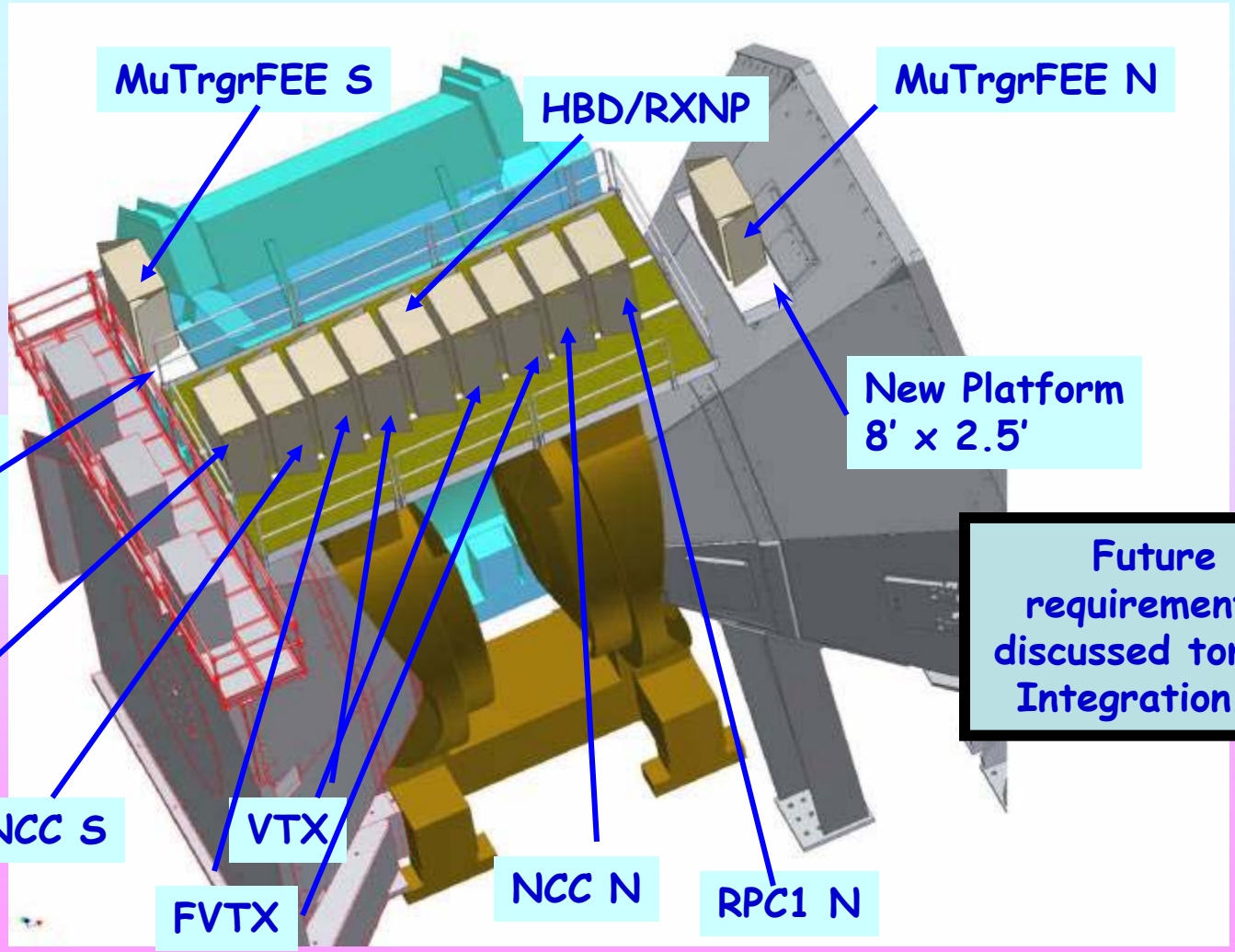
Introduction

Received questions and comments from Steve Kane & John Hynan.

Will set up review by end of this week.

Muon Trigger Rack Platforms

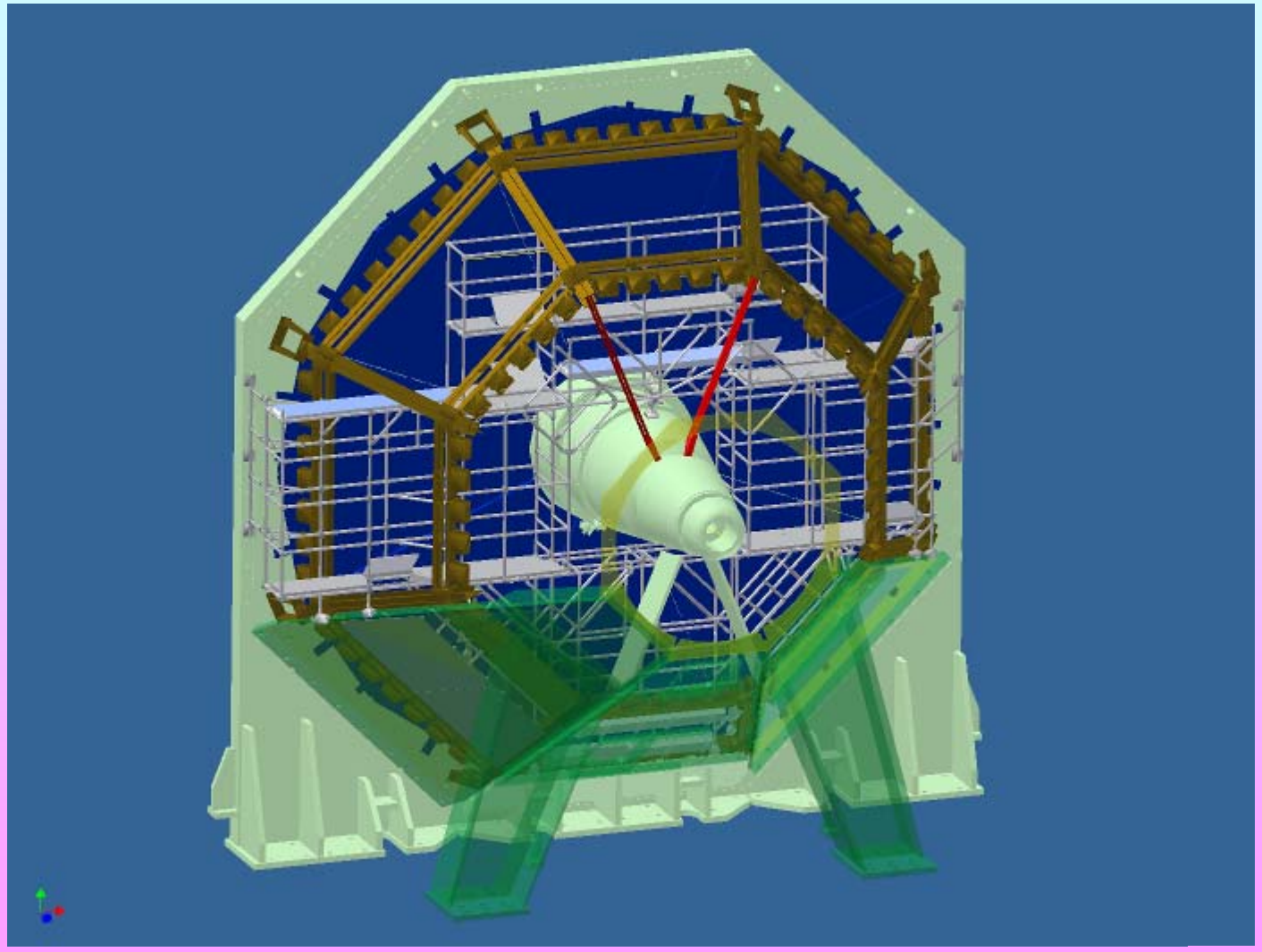
2008 Integration Planning



Future Rack requirements to be discussed tomorrow at Integration Meeting

MMN Scaffolds

2008 Integration Planning



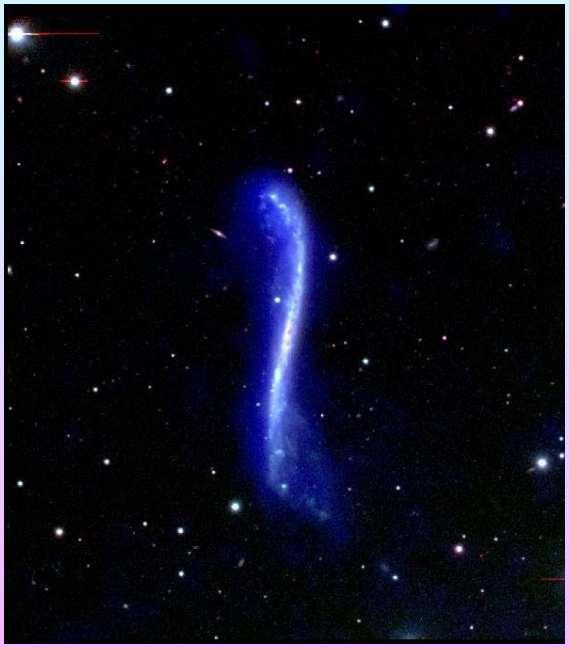
Long Term Plan

2008 Integration Planning

2008	Install stations 1& 2 of MuTr FEE upgrades (north), 1 octant Cu absorber (S), 1 half otants each RPC2/3 S, MMN sta. 2 scaffolding, MuTr Sta 1 N&S scaffolding, 1 octant of MuTrigger FEE upgrades (south, sta 1 & 2), MuTr N stn. 1 & 3 decaps, MuTrigger rack platforms (N&S), CM crane, remove/replace beampipe, infrastructure upgrades & repairs, misc. subsystem work, 1 RPC rack in South tunnel, MuTrgr FEE N & S racks
2009	Remove HBD & RXNP, scaffolding in MMS, MuTr S stn. 1 & 3 decaps, RPC2 N, RPC3 N, north Cu absorbers, partial VTX, iFVTX, MuTrgr S sta 1 & 2, MuTrgr S rack, 2 racks in N tunnel, infrastructure upgrades & repairs, misc. subsystem work
2010	Remainder of VTX barrel, partial FVTX, south Cu absorber completed, MuTrgr FEE stn. 3 S, any remaining MuTr decaps, infrastructure upgrades & repairs, misc. subsystem work
2011	RPC1 N&S, NCC N, remainder of FVTX, DC West upgrade/repair, remove absorbers, infrastructure upgrades & repairs, misc. subsystem work
2012	NCC S, upgrades contingency & wishlist, infrastructure upgrades & repairs, misc. subsystem work, TBD new and improved upgrades

** Years refer to the shutdown year and follow the run with the similar number (i.e. work in 2008 is to be done in the shutdown that follows run 8, and so on)*

Where To Find PHENIX Integration Info



Links for the weekly planning meeting slides, long term planning, pictures, videos and other technical info can be found on the web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm